WHAT IS CLAIMED IS

1. A scheduling method comprising the steps of:

(a) processing scheduling processes of all input lines according to a processing sequence in which a highest priority output line of a highest priority input line is processed with a first priority, in an environment in which a plurality of processing sequences have different scheduling targets among a plurality of input lines; and

(b) updating the highest priority input line and the highest priority output line of each input line for every scheduling cycle.

2. The scheduling method as claimed in claim 1, wherein said step (b) selects with priority a line in which a packet exists, when updating the highest priority input line and the highest priority output line of each input line.

3. A scheduling apparatus comprising:

scheduling processing means for processing scheduling processes of all input lines according to a processing sequence in which a highest priority output line of a highest priority input line is processed with a first priority, in an environment in which a plurality of processing sequences have

different scheduling targets among a plurality of input lines; and

priority line updating means for updating the highest priority input line and the highest priority output line of each input line for every scheduling cycle.

4. The scheduling apparatus as claimed in claim 3, wherein said priority line updating means selects with priority a line in which a packet exists, when updating the highest priority input line and the highest priority output line of each input line.

5. The scheduling apparatus as claimed in claim 4, wherein said priority line updating means does not update the highest priority output line of each input line when updating the highest priority output line if the highest priority output line cannot be scheduled.

6. The scheduling apparatus as claimed in claim 4, wherein said priority line updating means updates the highest priority output line of each input line by selecting a priority line within the output lines with priority over a non-priority line within the output lines.

7. The scheduling apparatus as claimed in claim 6, wherein said scheduling processing means independently manages the highest priority output line with respect to the priority line and the non-priority line.

8. The scheduling apparatus as claimed in claim 6, wherein said scheduling processing means collectively manages the highest priority output line with respect to the priority line and the non-priority line.

9. The scheduling apparatus as claimed in claim 6, wherein said scheduling processing means carries out a scheduling with respect to the non-priority line after carrying out a scheduling with respect to the priority line in a first half of a scheduling cycle.

10. The scheduling apparatus as claimed in claim 6, wherein said scheduling processing means carries out schedulings with respect to the priority line and the non-priority line in parallel, and selects a scheduling result of the priority line with priority when a contention is generated between the scheduling result of the priority line and a scheduling result of the non-priority line.

11. The scheduling apparatus as claimed in claim 4, wherein said priority line updating means selects and updates a high priority group within the output lines with priority over a low priority group within the output lines when updating the highest priority output line of each input line.

12. The scheduling apparatus as claimed in claim 11, wherein said scheduling processing means independently manages the highest priority output line with respect to the high priority group and the low priority group.

13. The scheduling apparatus as claimed in claim 11, wherein said scheduling processing means collectively manages the highest priority output line with respect to the high priority group and the low priority group.

14. A scheduling apparatus comprising:

scheduling processing means for processing scheduling processes of all output lines according to a processing sequence in which a highest priority input line of a highest priority output line is processed with a first priority, in an environment in which a plurality of processing sequences have different scheduling targets among a plurality of output lines; and

priority line updating means for updating the highest priority output line and the highest priority input line of each output line for every scheduling cycle.